



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/773,945

02/06/2004

Keyvan Sayyah

B-4524NP 621537-8

7973

7590 11/27/2007  
Richard P. Berg, ESQ.  
c/o LADAS & PARRY  
Suite 2100  
5670 Wilshire Boulevard  
Los Angeles, CA 90036-5679

EXAMINER

TRAN, DZUNG D

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

11/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,945	<b>Applicant(s)</b> SAYYAH, KEYVAN	
	<b>Examiner</b> Dzung D. Tran	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-13, 16-23 and 26-35 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 28-30 is/are allowed.
- 6) ☒ Claim(s) 6, 9-13, 16, 17, 19, 20, 23, 26, 27, 31, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 18, 21, 22, 32 and 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 6, 9, 16, 17, 19, 20, 23, 26-27, 31 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Watson et al. US 6,980,353.

Regarding claims 6, 9, 16, 17, 23, 26-27, 31 and 34, Watson discloses in Figure 1, a method/apparatus of an optical data transmitter comprising:

- (a) an optical comb generator 1 for generating a comb of discrete optical tones;
- (b) at least one transmitter segment (see Figure 1), said at least one transmitter segment and any additional transmitter segments including at least:
  - (i) an array of lasers with each laser in the array of lasers in each segment being injection locked to an optical tone in the comb generated by the optical comb generator (Col. 2, lines 58 to col. 3, line 26);
  - (ii) a data source 2 providing data for modulating the light generated by a majority but less than all of the lasers in the array of lasers in each segment ; and

(iii) a frequency shifter 3, 5 for frequency shifting at least one laser in the array of lasers in each segment, the frequency shifter shifting cooperating with the at least one laser in the array of lasers in each segment to generate a frequency-shifted unmodulated reference signal which occurs in the frequency domain between the discrete optical tones generated by the optical comb generator;

(c) multiplexers 12 for combining outputs of the modulated lasers and the frequency-shifted unmodulated reference signal and the comb of discrete optical tones onto at least two optical paths.

Regarding claims 10 and 27, Watson discloses wherein the lasers in said at least one transmitter segment are laser diodes (col. 3, lines 11-18).

Regarding claim 19, Watson discloses wherein the modulating selected ones of the optical tones in the optical comb is accomplished by modulating an output of each laser in a set of lasers which are optically injection –locked to different optical tones in the optical comb (Col. 2, lines 58 to col. 3, line26).

Regarding claim 20, Watson discloses wherein the output of each laser in a set of lasers is modulated by direct intensity modulation of each laser (col. 3, lines 1-9).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-13 and 33 are rejected under 35 U.S.C. 103(a) as being obvious over Heflinger et al. US patent no. 6,545,785 in view of Drentea et al. US patent no. 7,139,545.

With respect to claims 11 and 33, Heflinger discloses an optical data receiver (8, Figure 1) comprising: and at least one receiver segment (8, Figure 1), said at least one receiver segment and any additional receiver segments including at least: a photodetector for detecting modulated signals (75, Figure 1 (from modulator 50, Figure 1)); a photodetector for detecting unmodulated signals (60, Figure 1); and a mixer (90, Figure 1) for detecting the modulated signals (86, Figure 1) and the unmodulated signals (72, Figure 1) to recover at least a portion of the data provided by the data source (column 7 lines 40-54 (the voltage at output 94 is plotted as a function of the state of the optical phase radians of the phase modulated communication beam))(column 7 lines 9-21 (combined outputs from unmodulated signal 72 and modulated 76 combine to form the waveform shown in Figure 2C)).

Heflinger fails to disclose a filter array associated with each photodetector in each segment. Drentea, from the same field of endeavor discloses an ultra-wideband fully synthesized receiver and method (title) wherein the a receiver includes an array of filters (column 5 lines 20-29 (filter bank which can comprise any type of selected filter)) and an array of switches which are an array of MEMS switches (column 5 lines 48-51 (RF switching element may comprise MEMS elements)). Therefore, it would have been obvious to one of ordinary skill in the art to implement a filter array along as taught by

Drentea into the first photo-detector to select a desired modulated tone and into the second photo-detector to select a desired un-modulated tone in the receiver as taught by Heflinger. The motivation for doing so would have been to accept many more channels (Drentea: abstract (ultra-wideband receiver))(column 9 lines 31-36 (wideband receiver with 20 Ghz range)) without greatly increasing the amount of space needed for the receiver (Drentea: column 3 lines 2-14 (most suitable for receivers with space, size or weight limitations)).

Furthermore, the system as taught by Heflinger in view of Drentea does not disclose multiple receiver segments. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to implement multiple receiver sections in the transmission system as disclosed by Heflinger. Since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPC 8. Finally, for any transmission system with multiple transmitter/receiver sections it is extremely well known in the art as well as obvious to include some form of multiplexing/de-multiplexing for the motivation of condensing the communication signals and saving on the cost of using multiple communication lines for long distances.

With respect to claims 12-13, Heflinger in view of Drentea disclose the optical data receiver of claim 11 wherein the filter array in the data receiving portion comprises an array of bandpass filters (Drentea: column 5 lines 20-29 (filter bank which can comprise

any type of selected filter)) and an array of switches for selectively enabling the filters (Drentea: column 5 lines 48-51 (RF switching element may comprise MEMS elements)).

5. Claims 1-5 and 28-30 are allowed.
6. Claims 18, 21, 22, 32 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

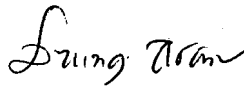
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number:  
10/773,945  
Art Unit: 2613

Page 7

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DZUNG TRAN  
PRIMARY PATENT EXAMINER

Dzung Tran  
11/17/2007